A17.E160
JACC March 9, 2010
Volume 55, issue 10A

CARDIAC FUNCTION AND HEART FAILURE

ECHOCARDIOGRAPHIC PREDICTORS OF RECOVERY OF LEFT VENTRICULAR EJECTION FRACTION AFTER RENAL TRANSPLANT

ACC Oral Contributions
Georgia World Congress Center, Room B408
Tuesday, March 16, 2010, 9:00 a.m.-9:15 a.m.

Session Title: Myocardial Recovery/Reverse Remodeling
Abstract Category: Myocardial Function/Heart Failure--Clinical Nonpharmacological Treatment
Presentation Number: 0916-07

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Background: Patients with end-stage renal failure who have left ventricular systolic dysfunction present a management dilemma. Renal transplant carries increased perioperative risk. Simultaneous cardiac transplantation must be considered. It is known that LV ejection fraction (LVEF) recovers and even normalizes in some patients after renal transplant without heart transplant.

Methods: We did a retrospective records review of all patients who underwent a renal transplant at the Cleveland Clinic from 1/1/2003 to 12/31/2007. Of 753 patients, we excluded those with combined (3) or recent (1) heart transplant. We found 47 had impaired LVEF before renal transplant, of which 42 had isolated renal transplants and 5 had combined pancreas transplant.

Results: In our study cohort of 47 patients (mean age 52 ± 13 years, 32% female, 68% white, 23% black, baseline LVEF 39.8 ± 10.3%, baseline serum creatinine 8.5 ± 4.2 mg/dL, baseline blood urea nitrogen 48 ± 16 mg/dL), LVEF normalized in 24, recovered partially in 15, and did not improve in 8. The baseline LVEF of those who did not improve was significantly less (30.4 ± 3.1%) than those who had partial or full recovery (41.7 ± 9.3%, p=0.016). However, other echocardiographic LV parameters were not discriminatory between the different groups. (Table)

S/No	n	Post-renal Transplant LVEF	Age (years)	Male Gender	Weight (kg)	BMI (Wt/Ht2) (kg/m2)	Baseline LVEF %	Post-Transplant LVEF %	Baseline LA Vol Index to BSA (cm3/m2)	LVIDd Index to BSA (cm/m2)	Baseline LV Mass Index to BSA (g/m2)
1	47	Overall	52 ± 13	32 (68%)	79.8 ± 19	26.5 ± 4.8	39.8 ± 10.3	49.6 ± 14.7	19.4±2.7	2.8±0.5	142.8±37
2	8	Severely impaired	57 ± 10	7 (88%)	96.1 ± 15.5	30.4 ± 3.1	30.4 ± 10.2	24.8 ± 3.5	18.5±2.7	2.6±0.2	131.8±42
3	15	Mild to Moderately impaired	55 ± 10	9 (60%)	72.1 ± 15.1	24 ± 3.5	41.3 ± 7.9	44.6 ± 6.0	19.9±2.7	2.8±0.4	146±33
4	24	Normalized	49 ± 15	16 (67%)	79.2 ± 20.2	26.7 ± 5.1	42 ± 10.2	61.1 ± 6.4	19.2±2.7	2.8±0.6	143.5±40
		2-tailed T-test of 2 vs 3	0.609		0.00307	0.00039	0.02188	<0.0005	0.41	0.106	0.521
		2-tailed T-test of 2 vs 4	0.0858		0.0257	0.0258	0.01655	<0.0005	0.668	0.276	0.599
		2-tailed T-test of 3 vs 4	0.133		0.219	0.0572	0.83157	<0.0005	0.484	0.81	0.845

Conclusions: Patients whose LVEF improved after renal transplant had a higher baseline LVEF than those who did not. This is a new and simple predictor of outcome which will help in clinical decision-making in this patient group.